Edited by Maureen A. Donnelly, Brian I. Crother, Craig Guyer, Marvalee H. Wake, and Mary E. White. 2005. University of Chicago Press, Chicago, Illinois. x + 675 pages. 45 USD.

This volume contains most of the papers presented in a symposium held as part of the 2000 joint meeting in La Paz, Baja California, Mexico, of the three major herpetological professional groups in North America: The American Society of Ichthyologists and Herpetologists, the Society for the Study of Amphibians and Reptiles, and the Herpetologist's League. The symposium was organized as a tribute to the submission of the manuscript *The Amphibians and Reptiles of Costa Rica: A Herpetofauna between Two Continents, between Two Seas* (ultimately published in 2002, University of Chicago Press) by Jay Mathers Savage, and the latter's lifetime accomplishments in promoting long-term study of tropical diversity.

The contents are divided somewhat awkwardly but equally (9 chapters each) between (I) Evolution and Biogeography and (II) Ecology, Biogeography and Faunal Studies. The content is heavily weighted (13 of the 18 contributions) on tropical American species, not surprising, perhaps, considering Central and South America's richness in species and diversity. These American studies range from molecular phylogeny of caecilians, diversity of Costa Rican salamanders, an endemic Honduran frog, chromosomal variation in a group of southern Central American frogs, secondary sexual characters in tropical frogs, selection and male reproductive success in a neotropical frog, co-occurrence of hylid frogs in a temporary wetland, frog-eating anurans in the Paraguayan Chaco, biogeography of the anole genus *Norops* and of bothropoid pitvipers, and herpetofaunal analyses of the Rincon Area in Costa Rica, a Guyanan rainforest, and the Guayana highlands. The one Old World contribution is a long-term frog monitoring in Papua New Guinea, The four primarily overview contributions on a wider geographic scale are on phylogenetic taxonomy as a replacement for the Linnean system, on snake phylogeny based on Ribosomal DNA and morphology, elapid relationships, and theories of snake mimicry.

There are 27 contributors, many well known in the herpetological literature, others less so (in order of appearance): Arnold G. Kluge, Marvelee H. Wake, Gabriela Para-Olea, Judy P. Y. Sheen, David B. Wake, W. Ronald Heyer, Rafael O. de Sa, Sarah Muller, Shyh-Hwang Chen, Sharon B. Emerson, Mary E. White, Maria Kelly-Smith, Brian I. Crother, Joseph B. Slowinski, Robin Lawson, Harry W. Green, Roy W. McDiarmid, Karen R. Lips, Craig Guyer, Maureen A. Donnelly, Norman J. Scott Jr., A. Luz Acquino, David P. Bickford, Kirsten E. Nicholson, Steven D. Werman, Roy W. McDiarmid (again), Jay M. Savage, Maureen A. Donnelly (again), Magan H. Chen, Graham G. Watkins, Roy W. McDiarmid (again) and Maureen A. Donnelly (again).

This is not a comprehensive anthology of tropical diversity of amphibians and reptiles but rather selective glimpses from a random assortment of studies. Even as such it samples effectively the range of research into these in the southern climes and their importance in perspective of the variation of these groups in the world. The baseline studies presented are of particular importance in this era of unprecedented habitat destruction and climatic change after a period of relative stability against the background of well publicised observations of amphibian declines and the more poorly studied condition in reptiles.

FRANCIS R. COOK

Emeritus Curator and Researcher, Canadian Museum of Nature, P. O. Box 3443, Station D, Ottawa, Ontario Canada

Fossil Ecosystems of North America: A Guide to the Sites and Their Extraordinary Biotas

By John R. Nudds and Paul A. Selden. 2008. The University of Chicago Press, Chicago. 288 pages, 39 USD Paper.

Fossil Ecosystems of North America is a science book, travel guide, mystery story, and historical saga in one package — a must-read for any naturalist with an interest in fossils, evolution, and geological time. Written by paleontologists John R. Nudds, University of Manchester, and Paul A. Selden, University of Kansas, it is a North American sequel to the 2004 *Evolution of Fossil Ecosystems*, in which the authors focused on 14 renowned fossil sites around the world.

Their new book features just as many sites, all located in North America, including three Canadian locations, one site which spans the Canada-United States border, and another in the Dominican Republic. Each site is covered by one chapter, with sub-sections devoted to its evolutionary context, its discovery and subsequent research, its stratigraphic setting, biota, and paleoecolgy, and comparisons with other similar sites. An appendix, written in true travel guide fashion, provides details on exploring the fossil locations and visiting related museums.

The Canadian sites, interestingly, contain evidence of the oldest biota. They include northern Ontario's Gunflint Chert, Newfoundland's Mistaken Point, and, probably Canada's best known fossil site, the Burgess Shale in British Columbia, also a UNESCO World Heritage Site.

The Gunflint Chert in northern Ontario, discovered in 1953 by geologist Stanley Tyler, has recently been dated at a staggering 1878 million years, which places it in the Paleoproterozoic era. It helps tell the story of

life without oxygen on the planet, of a time when only bacteria lived here, in rich and unusual diversity.

The evidence of early microbial ecosystems found at the Gunflint Chert includes filamentous, spherical, and star-shaped bacteria, as well as the curious and graceful umbrella-shaped *Kakabekia* bacteria, with its spheroidal bulb, slender stipe, and umbrella-like crown. All the fossils in the book are depicted in a combination of photographs and drawings.

The fossils at Mistaken Point on Newfoundland's Avalon Peninsula were discovered in 1967 by Shiva Balak Misra, an Indian graduate student studying at Memorial University. They help fill a critical gap in the history of life on Earth: the span between the microbial ecosystems of the Precambrian era, and the animal ecosystems of the Phanerozoic.

Mistaken Point biota range from disc-like *Aspidella*, to frond-shaped *Charnia* and bush-shaped *Bradgatia*. One of the most unusual shapes is *Triforillonia*, with its three-lobed body and rounded lobes radiating from a central rosette, possibly a holdfast or polyp-like organism. The particularly rich array of fossils preserved at Mistaken Point — a census population of thousands of individuals — offers valuable snapshots of living communities at the moment they were smothered by volcanic ash.

Fossil Ecosystems of North America is a fascinating book, easy-to-read, with highly comprehensible scientific explanations, extensive details, and helpful maps, photographs and drawings. It is, essentially, a riveting mystery story about life on this planet, filled with cataclysmic events, extinctions, takeovers, and human quests for clues and explanations, often involving conflict and heated debate. At another level, *Fossil Ecosystems of North America* is a science book for students and an interested lay readership. At yet another level, it is an unusual and informative "time travel" guide. Three books in one — a valuable addition to the bookshelves of any naturalist curious about deep time.

RENATE SANDER-REGIER

3, 11th Line, Bristol, Quebec J0X 1G0 Canada

Headless Males Make Great Lovers and Other Unusual Natural Histories

By Marty Crump. 2005. University of Chicago Press, Chicago, Illinois, USA. 199 pages. 25.00 USD Cloth, 14.00 USD Paper.

Marty [Martha] Crump, herpetologist, author of *In Search of the Golden Frog* (University of Chicago Press) and *Amphibians, Reptiles, and Their Conservation*, has compiled a remarkable collection of capsule glimpses of diverse natural history behaviour. Five section headings set the text style: Ain't Love Grand, The Mamas and the Papas, Eat to Live and Live to Eat, Don't Tread on Me, Ya Don't Say, but the serious reader should not be put off by this flippant approach — its aim is merely to grab the attention of readers who would not normally pick up a natural history book. The science is authoritative and reliable.

The detailed documentation of the scientific literature, on which the text is based, is contained in a 10-page concluding section arranged by topic with similarly innovative headings: Rampant Machismo, Come Up and See My Etchings, Sneakers and Deceivers, Survival of the Pampered, Nests Aren't Just for the Birds, Babies on Board, A Pouch Full of Miracles, Stomping for Worms, A Team Effort: How (Some) Ants Get Food, Chameleons of the Sea, Tears of Blood, Casting the Insides Outside, Spit 'n' Spray, Living Flashlights, Rapturous and Rapacious Reptiles, Smelling is Understanding, Love Potion Number Nine, It Pays to be Neighborly. This is followed by a seven-page index of organisms in the text.

This is a book ideally suited for idle moments or bedtime reading, the entries are as short and punchy as the section headings. The multitude of observations are gleaned and summarized from an amazingly vast diversity of research by ethologists and naturalists around the world. The title comes from the generally well-known mating of certain spiders where the female decapitates the male while he is still in the process of copulation. But the text covers a vast array of other behaviours, such as the stomping of Wood Turtles to bring the earthworms cherished as food to the surface. It is a remarkable testament to the seemingly endless variety of life styles and unique behavioural innovations present in the animal world, and is highly recommended to all naturalists for both education and amusement. The text is enlivened by sketches by Alan Crump.

FRANCIS R. COOK

Emeritus Curator and Researcher, Canadian Museum of Nature, P.O. Box 3443, Station D, Ottawa, Ontario K1P 6P4 Canada

State of North America's Birds of Prey

By Keith L. Bildstein, Jeff P. Smith, Ernesto Ruelas Inzunza, and Richard R. Veit. Nuttall Ornithological Club and The American Ornithologists' Union, Series in Ornithology (3) 2008. Softcover. 466 pages, 98 figures, 42 tables, 6-page glossary.

This is the third volume in a promising and commendable new series of ornithological publications, each appreciably larger than the AOU Monographs of long standing.

The book begins with a succinct history of raptor conservation by senior author Keith Bildstein. He tells the history of bounties as a method of raptor control. Between 1917 and 1952, Alaska paid bounties ranging from 50 cents to two dollars on over 128 000 Bald